

### Claims

- 1    1.    A method for processing the computed tomographic (CT) images of a lung, the method  
2       comprising the steps of:  
3       a)   processing a plurality of CT lung images, each composed of lung image data, taken  
4           from a patient in one CT study;  
5       b)   relating said plurality of CT lung images taken from a patient in one CT study with  
6           a plurality of CT lung images taken from the same patient in another study to  
7           detect changes in a nodule within the CT images of the lung.
  
- 1    2.    The method of claim 1 wherein the step of relating said plurality of CT lung images taken  
2       from a patient one CT study with a plurality of CT lung images taken from the same  
3       patient in another study comprises the steps of:  
4       a)   automatically registering a plurality of CT images from a first study with CT images  
5           from a second study;  
6       b)   automatically cross matching nodules between CT lung image data from the first and  
7           second study;  
8       c)   calculating the volume change of each previously identified nodal feature by  
9           automatically comparing the computed volume,  $V$ , of a nodule from the first study  
10          with the computed volume,  $V$ , of the same nodule from the second study.
  
- 1    3.    The method of claim 2 wherein the step of automatically registering the plurality of CT images  
2       study comprises the steps of:  
3       a)   identifying the vertical position of a first CT image ;  
4       b)   matching the vertical position of the first CT image with an image from the second CT  
5           study;  
6       c)   aligning the centroid of the sternum, the vertebra, and the thorax from the first study  
7           with that of the second study ; and  
8       d)   automatically aligning the trachea, spine, sternum and centroids of the individual and  
9           combined lungs by an affine transformation.